

Claim 1 (Amended). An active matrix-type display device comprising a plurality of pixels including a plurality of EL elements, characterized in that:

said active matrix-type display device provides a gray scale display by controlling a period of time at which said plurality of EL elements emit light in one frame period;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one frame period,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 2 (Amended). An active matrix-type display device comprising a plurality of pixels including a plurality of EL elements, characterized in that:

said active matrix-type display device provides a gray scale display by controlling a sum of lengths of sub-frame periods in which said plurality of EL elements emit light out of said plurality of sub-frame periods included in one frame period;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one sub-frame period,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 3 (Amended). An active matrix-type display device comprising a plurality of pixels, said device including a plurality of EL elements, a plurality of EL driving TFTs for controlling light emission of said plurality of EL elements, a plurality of switching TFTs for controlling a driving of said plurality of EL driving TFTs, characterized in that:

said active matrix-type display device provides a gray scale display by controlling a period of time at which said plurality of EL elements emit light in one frame period;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one frame period,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 4 (Amended). An active matrix-type display device comprising a plurality of pixels, said device including a plurality of EL elements, a plurality of EL driving TFTs for controlling light emission of said plurality of EL elements, a plurality of switching TFTs for controlling driving of said plurality of EL driving TFTs, characterized in that:

said active matrix-type display device provides a gray scale display by controlling a sum of lengths of sub-frame periods in which said plurality of EL elements emit light out of said plurality of sub-frame periods included in one frame period;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one sub-frame period,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 5 (Amended). An active matrix-type display device comprising a plurality of pixels including a plurality of EL elements, characterized in that:

said active matrix-type display device provides a gray scale display by controlling a period of time at which said plurality of EL elements emit light in one frame period;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one frame period; and

adjacent pixels of said plurality of pixels share a power source supply line for supplying a voltage applied to said second electrode,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 6 (Amended). An active matrix-type display device comprising a plurality of pixels including a plurality of EL elements, characterized in that:

said active matrix-type display device provides a gray scale display by controlling a sum of lengths of sub-frame periods in which said plurality of EL elements emit light out of said plurality of sub-frame periods included in one frame period;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one frame period; and

adjacent pixels of said plurality of pixels share a power source supply line for supplying a voltage applied to said second electrode,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

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Claim 7 (Amended). An active matrix-type display device comprising a plurality of pixels, said device including a plurality of EL elements, a plurality of EL driving TFTs for controlling light emission of said plurality of EL elements, a plurality of switching TFT for controlling driving of said plurality of EL driving TFT, characterized in that:

said active matrix-type display device provides a gray scale display by controlling a period of time at which said plurality of EL elements emit light in one frame period;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one frame period; and

a power source supply line for supplying a voltage applied to said second electrode is shared among adjacent pixels of said plurality of pixels,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 8 (Amended). An active matrix-type display device comprising a plurality of pixels, said device including a plurality of EL elements, a plurality of EL driving TFTs for controlling light emission of said plurality of EL elements, a plurality of switching TFTs for controlling driving of said plurality of EL driving TFTs, characterized in that:

said active matrix-type display device provides a gray scale display by controlling a sum of lengths of sub-frame periods in which said plurality of EL elements emit light out of said plurality of sub-frame periods included in one frame period;

8) said plurality of EL elements comprise a first electrode and a second electrode; and a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one sub-frame period; and

adjacent pixels of said plurality of pixels share a power source supply line for supplying a voltage applied to said second electrode,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 9 (Amended). An active matrix-type display device comprising a plurality of pixels, said device including a plurality of EL elements, a plurality of EL driving TFTs for controlling light emission of said plurality of EL elements, a plurality of switching TFTs for controlling driving of said plurality of EL driving TFTs, characterized in that:

said active matrix-type display device provides a gray scale display;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one frame period,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 10 (Amended). An active matrix-type display device comprising a plurality of pixels, said device including a plurality of EL elements, a plurality of EL driving TFTs for controlling light emission of said plurality of EL elements, a plurality of switching TFTs for controlling driving of said plurality of EL driving TFTs, characterized in that:

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said active matrix-type display device provides a gray scale display by inputting an analog video signal to a source region of said switching TFTs;

said plurality of EL elements comprise a first electrode and a second electrode; and

a potential of said first or said second electrode changes in such a manner that a polarity of an EL driving voltage is inverted for each one frame period; and

adjacent pixels of said plurality of pixels share a power source supply line for supplying a voltage applied to said second electrode,

wherein said EL driving voltage is a difference between said potentials applied to said first and said second electrodes.

Claim 11 (Amended). An active matrix-type display device according to claim 3, wherein said EL driving TFT and said switching TFT comprise an n-channel type TFT or a p-channel type TFT.

Claim 12 (Amended). An active matrix-type display device according to claim 1, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

Claim 13 (Amended). An active matrix-type display device according to claim 1, wherein said one frame period is 1/120 s or less.


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Claim 14 (Amended). An active matrix-type display device according to claim 9, wherein said EL layer incorporated in said plurality of EL elements comprises a low molecular organic material selected from the group consisting of Alq₃ (tris-8-quinolylite-aluminum), and TPD (triphenylamine derivative).

Claim 15 (Amended). An active matrix-type display device according to claim 9, wherein said EL layer incorporated in said plurality of EL elements comprises a polymer organic material selected from the group consisting of PPV (polyphenylenevinylene), PVK (polyvinyl-caracole), and polycarbonate.

Claim 16 (Amended). An active matrix-type display device according to claim 1, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

Claim 17 (Amended). An active matrix-type display device according to claim 4, wherein said EL driving TFT and said switching TFT comprise an n-channel type TFT or a p-channel type TFT.

Claim 18 (Amended). An active matrix-type display device according to claim 7, wherein said EL driving TFT and said switching TFT comprise an n-channel type TFT or a p-channel type TFT.

 Claim 19 (Amended). An active matrix-type display device according to claim 8, wherein said EL driving TFT and said switching TFT comprise an n-channel type TFT or a p-channel type TFT.

Claim 20 (Amended). An active matrix-type display device according to claim 9, wherein said EL driving TFT and said switching TFT comprise an n-channel type TFT or a p-channel type TFT.

Claim 21 (Amended). An active matrix-type display device according to claim 10, wherein said EL driving TFT and said switching TFT comprise an n-channel type TFT or a p-channel type TFT.

Claim 22 (Amended). An active matrix-type display device according to claim 2, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

Claim 23 (Amended). An active matrix-type display device according to claim 3, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

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Claim 24 (Amended). An active matrix-type display device according to claim 4, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

Claim 25 (Amended). An active matrix-type display device according to claim 5, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

Claim 26 (Amended). An active matrix-type display device according to claim 6, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

Claim 27 (Amended). An active matrix-type display device according to claim 7, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

Claim 28 (Amended). An active matrix-type display device according to claim 8, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

B) Claim 29 (Amended). An active matrix-type display device according to claim 9, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

Claim 30 (Amended). An active matrix-type display device according to claim 10, wherein said light emission of said plurality of EL elements is controlled with said digital data signal input to said switching TFT.

Claim 31 (Amended). An active matrix-type display device according to claim 2, wherein said one frame period is $1/120$ s or less.

Claim 32 (Amended). An active matrix-type display device according to claim 3, wherein said one frame period is $1/120$ s or less.

Claim 33 (Amended). An active matrix-type display device according to claim 4, wherein said one frame period is $1/120$ s or less.

Claim 34 (Amended). An active matrix-type display device according to claim 5, wherein said one frame period is $1/120$ s or less.

Claim 35 (Amended). An active matrix-type display device according to claim 6, wherein said one frame period is $1/120$ s or less.

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Claim 36 (Amended). An active matrix-type display device according to claim 7, wherein said one frame period is $1/120$ s or less.

Claim 37 (Amended). An active matrix-type display device according to claim 8, wherein said one frame period is $1/120$ s or less.

Claim 38 (Amended). An active matrix-type display device according to claim 9, wherein said one frame period is $1/120$ s or less.

Claim 39 (Amended). An active matrix-type display device according to claim 10, wherein said one frame period is $1/120$ s or less.

Claim 40 (Amended). An active matrix-type display device according to claim 10, wherein said EL layer incorporated in said plurality of EL elements comprises a low molecular organic material selected from the group consisting of Alq₃ (tris-8-quinolylite-aluminum), and TPD (triphenylamine derivative).

B' Claim 41 (Amended). An active matrix-type display device according to claim 10, wherein said EL layer incorporated in said plurality of EL elements comprises a polymer organic material selected from the group consisting of PPV (polyphenylenevinylene), PVK (polyvinyl-caracole), and polycarbonate.

Claim 42 (Amended). An active matrix-type display device according to claim 2, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

Claim 43 (Amended). An active matrix-type display device according to claim 3, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

Claim 44 (Amended). An active matrix-type display device according to claim 4, wherein said active matrix-type display device is incorporated in one selected from the group consisting of

a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

Claim 45 (Amended). An active matrix-type display device according to claim 5, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

B! Claim 46 (Amended). An active matrix-type display device according to claim 6, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

Claim 47 (Amended). An active matrix-type display device according to claim 7, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

Claim 48 (Amended). An active matrix-type display device according to claim 8, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

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Claim 49 (Amended). An active matrix-type display device according to claim 9, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.

Claim 50 (Amended). An active matrix-type display device according to claim 10, wherein said active matrix-type display device is incorporated in one selected from the group consisting of a video camera, a digital camera, a head-mount display, a car navigation system, a personal computer, and a DVD player.
